

Committee(s)	Dated:
Operational Property and Projects Sub Committee	26 October 2022
Subject: 22/23 Energy & Decarbonisation Performance Q1 Update for the Operational Portfolio.	
Which outcomes in the City Corporation's Corporate Plan does this proposal aim to impact directly?	5,11,12
Does this proposal require extra revenue and/or capital spending?	no
If so, how much?	n/a
What is the source of Funding?	n/a
Has this Funding Source been agreed with the Chamberlain's Department?	No
Report of: The City Surveyor	For Information
Report author: Graeme Low	

Summary

This report presents the 2022/23 Quarter 1 energy performance for CoL operational sites. Progress remains on track to reach the operational property targets for our Net Zero Carbon targets for 2027. With a 19% reduction in energy usage and a 33% reduction in CO₂e emissions since the 2018/19 baseline year. Progress has been made is completing surveys for the next phase of capital interventions, detailed Investment proposals are now being drafted. Energy prices remain a concern, alongside reported delays in the expected start date for the Power Purchase Agreement.

Recommendation(s)

- Based on rolling year, Q1 22/23 energy consumption has reduced by 19% compared to the baseline year 2018/19.
- Note the Q1 22/23 CO₂e emissions are in line with our targets with a 33% or 11,778 tonnes/CO₂e drop since 2018/19.
- Note the large majority of the Public Sector Decarbonisation Scheme (PSDS) funded work is now complete.

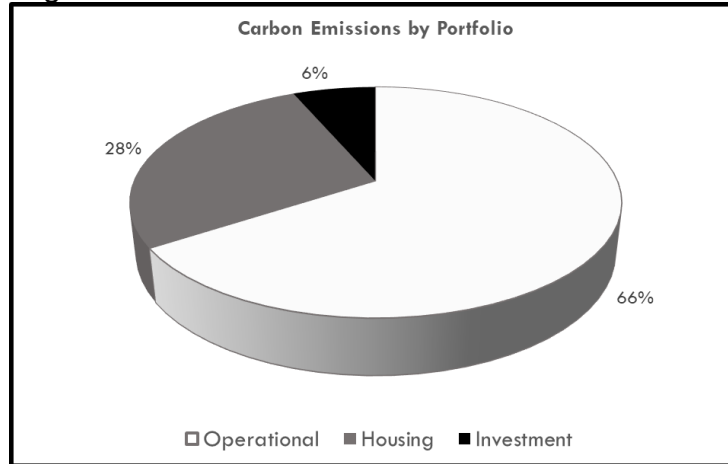
Main Report

Background

1. At OPPSC on 20th July 2022 the 21/22 Q4 Energy performance report was presented. This identified the rolling 12-month energy performance to Q4 as a 18% improvement on the weather corrected values for the Climate Action Baseline year of 2018/19.
2. This saving was due to site disposals, active management of the BEMS by the Energy Team and ongoing success of the PSDS project.
3. The Public Sector Decarbonisation Scheme (PSDS) projects have supported this goal and all projects on the PSDS programme have reached GW5 or beyond. The RA-W contract, covering the majority of PSDS works commenced in September 2021. Full completion of the projects is expected by November 2022.

CAS target alignment

- The Energy Team continue to collaborate with CAS on best practise methodologies for reporting KPIs and achieving overall CAS targets. The CAS buildings baseline includes Operational property portfolio, landlord supplies to housing estates and investment properties.
- Approximately 65% of emissions relate directly to the operational property portfolio as demonstrated by the figure below*



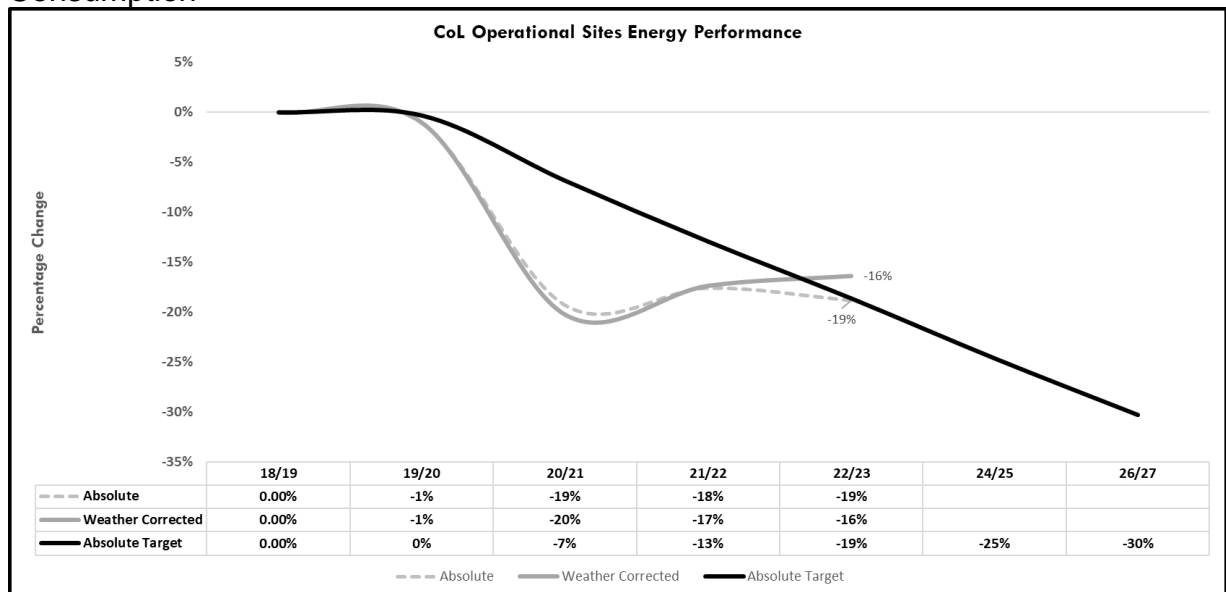
- To achieve CAS Net Zero CO2 target by 2027, residual emissions are planned to be mitigated via land-based carbon sequestration from our green spaces. These targets are translated into energy and CO2e, see chart 1 and chart 2 below.

Current position

There has been a gradual increase in consumption compared to the previous quarter due to the return to normal operations. The impact of PSDS Energy saving projects will not be fully realised until later in 2022. However, we remain on track to reach our CAS targets. Milder than average weather over the period has contributed to the position.

Performance update

Chart 1. Performance Against CAS Target: Absolute and Weather Corrected kWh Consumption

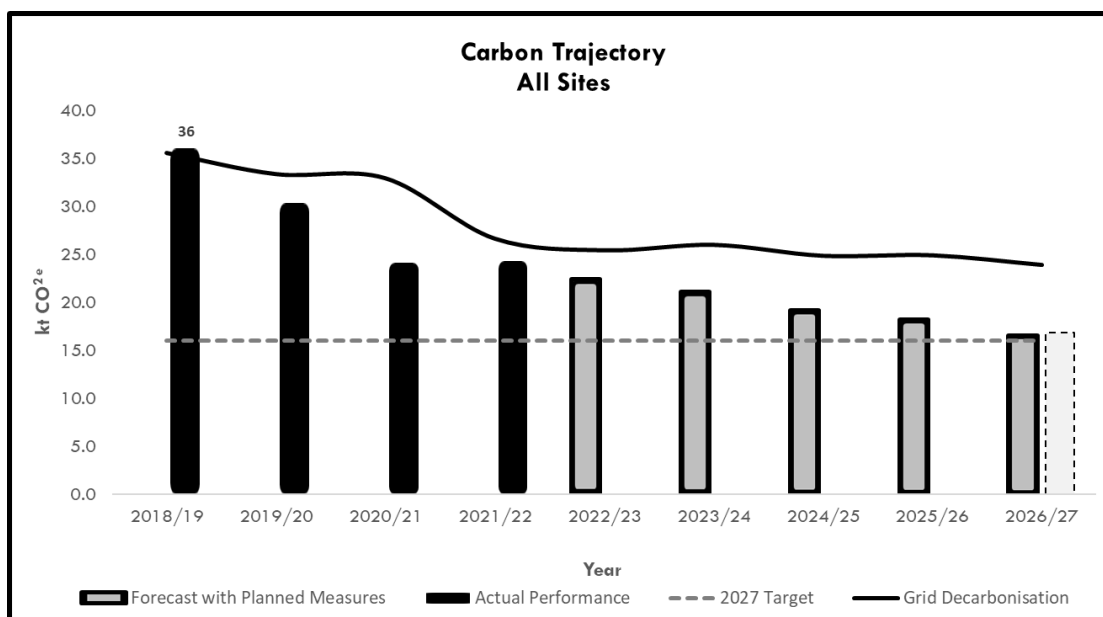


7. **Long term:** Chart 1 presents updated operational building targets to reflect 2018/2019 baseline data in conjunction with the Climate Action Strategy (CAS). It shows continued progress towards the interim target. Compared to the 2018/2019 baseline, the performance up to Q1 2022/2023 indicates:
- A 19% reduction in absolute energy consumption.
 - A 16% reduction when corrected for the weather

A comparison of rolling year energy performance for the Operational properties Q1 2022/23 and Q1 2021/22 shows an increase in weather corrected values by 5%. This was expected as we have returned to a normal mode of operations. However, we remain on track towards our CAS target. Further details can be found in table 1 of the appendix.

Chart 2. Carbon Trajectory presents progress towards the 2027 carbon target for the Corporation’s portfolio and shows:

- A saving of 11,778 tonnes of CO_{2e} or a 33% reduction from 2018/2019



The following provides a synopsis of Chart 2:

- The savings since 2018/19 demonstrate a positive trajectory for the Climate Action Strategy 2027 Net Zero Carbon target. Finalisation on the delivery of PSDS projects (table 4 of Appendix) will support continued reduction of emissions as we return to more sustained use of our buildings. The Energy Team recommends that sites continue to take active control of their energy consumption by ensuring proper maintenance of BEMS and staying on top of general operating/maintenance issues to ensure consistent reduction of carbon emissions.
- Building stock changes and improved control of our energy usage through Building Energy Management System (BEMS) control improvement within buildings has played a key role in capturing these savings. The PSDS project is expected to further enhance these savings upon completion.
- Item 10 of the appendix provides an overview of the Operational property carbon performance, without landlord emissions for Housing and IPG portfolios. This currently shows 15.9 KtCO_{2e} of emissions, a reduction of 6.2 KtCO_{2e} or 28% since 2018/19. This keeps the Operational property portfolio on track to support the City Corporation’s net zero carbon targets for 2026/27.

Table 1. Overall performance Q4 Top 5 and bottom five sites – weather corrected

Top 5 Best Performing Sites Weather Corrected	Jun-19	Jun-21	Jun-22	Difference kWh 21 vs 22	Difference kWh 19 vs 22	Difference % 19 vs 22
London Central Market (Smithfield)	16,091,832	9,819,425	10,850,112	1,030,688	-5,241,720	-33%
Guildhall Complex	17,596,559	17,982,159	13,584,693	- 4,397,466	-4,011,866	-23%
Streetlighting	3,576,514	2,139,478	1,961,862	- 177,616	-1,614,651	-45%
Barbican Arts Centre	17,316,982	12,195,779	15,808,659	3,612,880	-1,508,323	-9%
New Spitalfields Market (Landlords)	6,795,740	5,753,961	5,899,856	145,895	-895,884	-13%

Bottom 5 Performing Sites Weather Corrected	Jun-19	Jun-21	Jun-22	Difference kWh 21 vs 22	Difference kWh 19 vs 22	Difference % 19 vs 22
New Street (21)	1,683,691	1,221,552	2,622,333	1,400,781	938,642	56%
GSMD - Milton Court	3,587,099	2,693,611	4,345,074	1,651,464	757,975	21%
Walbrook Wharf Cleansing Depot	1,639,210	1,834,012	2,159,765	325,753	520,555	32%
Mansion House	2,200,311	2,104,434	2,382,125	277,691	181,814	8%
Open Spaces Epping Forest	653,132	1,638,558	744,929	- 893,629	91,797	14%

- Table 1 above provides a snapshot of the highest energy reductions and the greatest increases within the top thirty buildings over the past 12 months to March, when compared to the previous 12 months. The full list of the top thirty site performance and performance overview for bottom five increases can be found within table 1 of the Appendix.
- The top sites have continued to show a reduction due to improved controls and implementation of energy saving measures and a decline in occupancy levels. Lighting upgrades have occurred at Guildhall and across streetlighting. Smithfield reductions are due to active Sites management of the BEMS and reduced occupancy levels at the commercial offices. The Barbican Exhibition Halls have closed temporarily supporting further demand reduction and the PSDS project is nearing completion.
- The bottom sites can be attributed to increases in heating and refurbishment activities, as well as possible maintenance issues. Further, there has been an increase in occupancy levels due to a recruitment drive at 21 New Street. The energy team continue to collaborate with the sites to support reduction projects. Further information can be found in the Appendix.

Energy Team and other activity Progress on energy projects

- The PSDS Project:** the scope of works included lighting upgrades, ventilation upgrades, building control upgrades and improvements, sub-metering, new energy management and building analytics software. These works are mostly complete across the Barbican Arts Centre, Guildhall, GSMD, and the LMA; with some remaining works and commissioning programmed up to November 2022. Verification of the savings is expected at gateway 6 in 2023.
- Energy Supply contract procurement:** Gas and electricity contracts have been procured using a “purchase in advance” approach for the period November 2021 -2025, this strategy is designed to return a market reflective price. We continue to procure the remaining electricity volume for October 22 – September 23 via our Brokers (Laser Energy), with most of this volume procured. Currently 68% of the electricity is procured via the grid, the rest will be provided by the Power purchase agreement (PPA), with some expected trades back to the market. Continued volatility in the marketplace has increased the likely impact of a significant impact into 23/24, we are working with Chamberlains to manage this.

16. **PPA:** The PPA contract with Voltalia UK Ltd. is in place and construction work on site at the South Farm Solar site near Blandford Forum is now very well advanced with completion expected by November 2022. Recently work has progressed with the electricity sub-station, grid connection is also due in October. Once operational, the PPA will provide over 50% of our electricity at ~ £41 MWh in 22/23 compared to the current market rates for electricity of ~£650 MWh. The PPA is expected to provide a £2.12m cost benefit in 2022/23 and a £7.35m cost benefit for 23/24 based on current market rates for grid connected electricity (Source: Mitie energy research).
17. The introduction of PPA will help significantly to mitigate the full impact of electricity prices rises when this begins operating, though this remains a short term issue as the delay in operation has increased the electricity volume we need to procure through the Autumn.

Corporate and strategic implications

18. **Strategic implications:** Energy performance is linked to resilience and helps ensure business continuity through reduced pressure on the energy infrastructure within the square mile. We support a thriving economy through ensuring environmental responsibility in this way. Our energy performance helps to shape outstanding environments through the reduction of CO₂ emissions and our commitment to procuring clean renewable energy. In this way our energy performance helps shape outcomes 5, 11 and 12 of the Corporate Plan.
19. **Financial implications:** The savings in this report detail reductions in energy consumption and not against agreed budgets. For longer sustainable gains the focus needs to be on improving efficient use of energy, through targeted investment in energy saving measures. Note that future savings as a result of lower energy spend related to the PSDS project will be transferred to the Build Back Better fund for re-investment with further projects, any capital underspend will be return to Government.

Conclusion

20. The Energy performance within Q1 remains on track with the long-term trajectory needed to meet our CAS targets for 2027. We continue to mobilise workstream (NZ1) related to operational buildings within the Climate Action Strategy and ensure delivery of the projects that form part of the PSDS project by Q2 2022/23. We have absorbed the impact of the reoccupation of our building stock. Our new targets are challenging but achievable, requiring action in all areas of the Corporation to ensure we meet our planned objectives.

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